

REMARKS

An Office Action was mailed November 30, 2005 and declared final.

Claims 1 and 4-31 are pending in the application.

Claims 1, 4-15 are allowed. Claim 19 stands objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form.

By the foregoing, claims 16 and 19 are amended and claim 32 is newly presented. No new matter has been added. Entry and examination of the claim is requested.

Allowable Claims

Applicant expresses his gratitude to the Examiner for the indication of allowance of claim 19. Consistent with it, claim 19 is amended to independent form and incorporating the subject matter of the claims from which it depends. No new matter has been added.

Rejection under 35 U.S.C. §103(a)

Claims 16-18 and 20-31 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 4,761,269 to Conger in view of U.S. Patent 5,888,907 to Tomoyasu et al. Therein, claim 16 is the sole independent claim and is now amended. The rejection is respectfully traversed.

The present invention is a reaction chamber for silicon epitaxial growth. Improved deposition occurs when gases can flow slowly but efficiently over the wafer to make a thin film deposition.

In the presently claimed invention of claim 16, slow and improved deposition is accomplished with a flat plate that deflects gases coming from a vertical direction and guides them into a horizontal direction until the edge of the plate. The gases then flow slowly downward to the susceptor for improved deposition. Advantageously, this slows the gases and allows for a better thinner film. The same advantages are claimed in claim 32 with respect to the absorption of energy.

The cited art does not teach, disclose, or suggest the claimed flat plate deflecting gases in a vertical direction and guiding gases into a horizontal direction for falling in downward direction at the edge of the flat plate for improved deposition or wherein the flat plate absorbs vertical energy and wherein gases flow in a horizontal direction until an edge of the flat plate.

Tomayasu teaches a disc susceptor reactor wherein gases are directly flowed onto the depositions target. Thus, Tomoyasu is silent with respect to the claimed invention. Conger fails to fill the gaps of Tomayasu. Conger teaches that gases flow in arcuate channel to deposition on wafers. Unlike the presently claimed invention, the gases in Conger continue in at least a partially vertical direction. Therein, Conger just as much as Tomayasu fail to deflect gases in a vertical direction and guiding these gases into a horizontal direction for falling solely by gravity for improved deposition or wherein the flat plate absorbs vertical energy and wherein gases flow on the plate in a horizontal direction until an edge of the plate.

In fact, combining Tomoyasu and Conger, if these types of reactors were combinable, would teach a reactor that imparts energy from a vertical gas flow through the dissipater onto the wafer. The present invention avoids such a force by deflecting the gases and, thus, improves deposition into a thinner film. Accordingly, the Examiner is respectfully requested to withdraw the rejections for the reasons given.

All dependent claims are allowable for at least the same reasons as the independent claim from which they depend.

The application is in condition for allowance which action is respectfully requested. However, if for any reason the Examiner should consider this application not to be in condition for allowance, the Examiner is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

US 09/807,589

Any fee due with this paper, including any extension fee, may be charged to Deposit Account 50-1290.

Respectfully submitted,



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